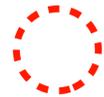
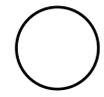
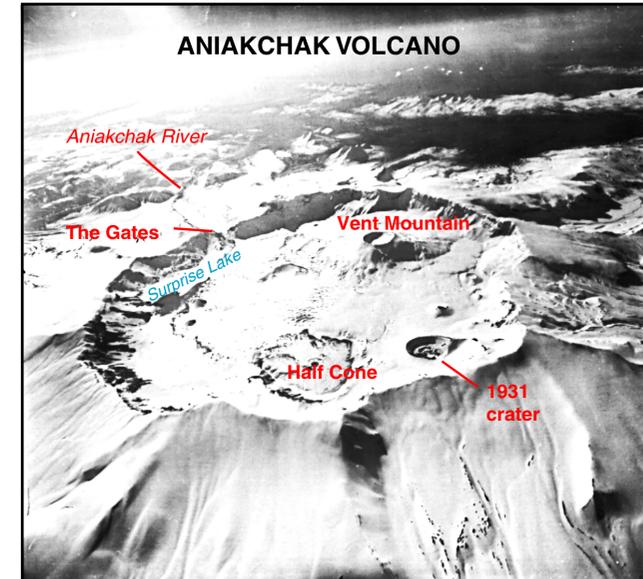


During the last 10,000 years, Aniakchak has erupted explosively at least 40 times, more than any other volcano in the eastern Aleutian arc (Riehle and others, 1999). Although Aniakchak shows no sign of unrest at present, explosive and nonexplosive eruptions will occur in the future.

EXPLANATION

-  Area most likely to be affected by ballistic fallout during future eruptions at Aniakchak
-  Areas most likely to be affected by pyroclastic flows and surges during future eruptions of Aniakchak. Inner circle represents likely maximum extent of pyroclastic flows and surges during typical large explosive eruptions at Aniakchak. Outer circle represents area at risk during eruptions larger than those documented since caldera formation 3,500 years ago
-  Approximate topographic boundary of Aniakchak caldera
-  Area most likely to be affected by lava flows and lava domes during future eruptions of Aniakchak
-  Areas most likely to be affected by lahars and floods during future eruptions of Aniakchak
-  Warm spring that is known source of carbon dioxide gas. Prior to or during future volcanic activity, this site or other sites inside caldera may emit volcanic gas in dangerous concentrations

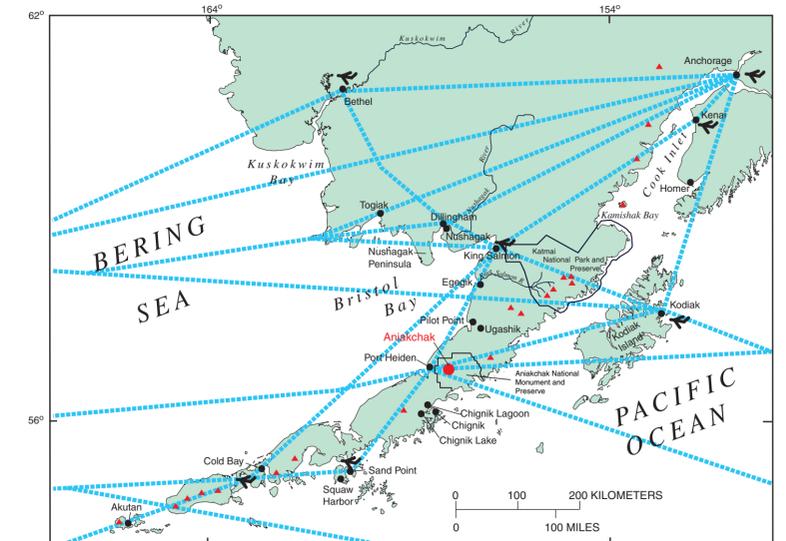
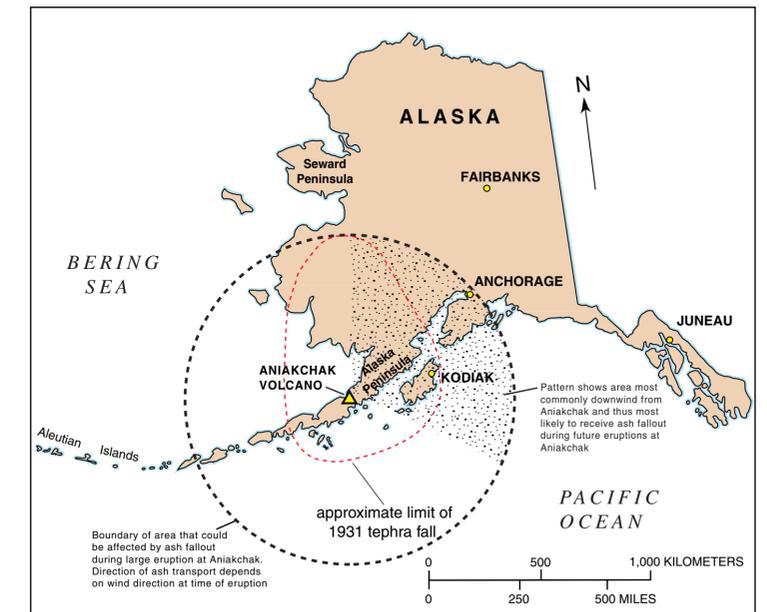


ANIAKCHAK VOLCANO
Aerial view of Aniakchak, a 10-kilometer-diameter, 0.5- to 1.0-kilometer-deep caldera that formed during a catastrophic eruption 3,500 years ago. Since then, at least a dozen separate vents within the caldera have erupted, often explosively, to produce lava flows and widespread ash deposits. The most recent eruption at Aniakchak occurred in 1931 and was one of the largest eruptions in Alaska in the last 100 years. Photograph by U.S. Navy, May 9, 1943. View is toward east-southeast.

PRINCIPAL VOLCANO HAZARDS AT ANIAKCHAK

- **Ash clouds**
During explosive eruptions, volcanic ash most likely will travel north, northeast, east, and southeast from Aniakchak. These ash clouds are a significant hazard to aircraft even thousands of kilometers downwind.
- **Fallout**
During explosive eruptions, coarse debris and fine ash settle to the ground in accumulations ranging from many meters thick near the vent to a fine dusting hundreds of kilometers downwind. During large eruptions, Port Heiden may receive significant amounts of ash and coarse pumice fall.
- **Ballistics**
Explosive eruptions launch pebble- to boulder-sized fragments of rock or pumice on arcuate trajectories from the vent. These projectiles, called ballistics, pose a serious hazard to people and structures.
- **Pyroclastic flows and surges**
Hot avalanches or blasts of volcanic gas, ash, and rock debris can travel at speeds in excess of 100 meters per second and destroy everything in their path. Only very large eruptions at Aniakchak will produce pyroclastic flows and surges that inundate areas far beyond the caldera rim.
- **Lava flows and domes**
When molten rock erupts nonexplosively at the Earth's surface, it can form elongate lava flows or rounded mounds of rubble called lava domes. The immediate hazard from flows and domes is burial. Future lava flows and domes most likely will be confined to within the caldera at Aniakchak.
- **Lahars and floods**
Hot ejecta can mix with snow, ice, and surface water to form water floods and destructive, fast-moving slurries of water, mud, sand, and boulders called lahars. All drainages leading away from Aniakchak could be affected by lahars and floods. Sudden release of impounded water from the large maar crater or from Surprise Lake could generate floods along the Aniakchak River.

HAZARD FROM VOLCANIC ASH



Aniakchak is beneath many aircraft routes (dashed blue lines) that pass over southwestern Alaska. An explosive eruption from Aniakchak could severely impact air traffic in the North Pacific, and ash clouds from Aniakchak could travel into Canadian airspace and over the rest of the continental United States.



PRELIMINARY VOLCANO-HAZARD ASSESSMENT FOR ANIAKCHAK VOLCANO, ALASKA

by

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2001

